



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|------------------------|---------------------|------------------|
| 10/534,658 | 10/14/2005 | Bernd Schonebeck | 7103.00US | 7100 |
| 24739 7590 06/25/2008 CENTRAL COAST PATENT AGENCY, INC 3 HANGAR WAY SUITE D WATSONVILLE, CA 95076 | | | | |
| EXAMINER SHAH, PARAS D | | | | |
| ART UNIT 2626 | | PAPER NUMBER | | |
| MAIL DATE 06/25/2008 | | DELIVERY MODE PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/534,658

Applicant(s)

SCHONEBECK, BERND

Examiner

PARAS SHAH

Art Unit

2626

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SG/US)
- Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This communication is in response to the Amendments and Arguments filed on 03/31/2008. Claims 23-46 are pending and have been examined, with claims 1-22 being cancelled. The Applicants' amendment and remarks have been carefully considered, but they do not place the claims in condition for allowance. Accordingly, this action has been made FINAL.
2. All previous objections and rejections directed to the Applicant's disclosure and claims not discussed in this Office Action have been withdrawn by the Examiner.

Response to Arguments

3. Applicant's arguments (pages 7-9) filed on 03/31/2008 with regard to claims 23-46 have been fully considered but they are moot in view of new grounds for rejection.

Response to Amendment

4. Applicants' amendments filed on 03/31/2008 have been fully considered. The newly amended limitations in claims 23 and 35 necessitate new grounds of rejection.

Specification

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The limitation of claim 27 "measuring device" is not presented in the specification.

Claim Objections

6. Claim 44 is objected to because of the following informalities: "the system" should be change to "the method". Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 27 and 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The limitation of "measuring device" is unclear ad to what this limitations is trying to encompass. Further, the specification does not give a thorough understanding of what this measuring device is and how it is used in conjunction with the situation model. Hence, for the purposes of compact prosecution the limitation was interpreted to mean a microphone for picking up a speech signal.
8. Claims 33 and 35 are rejected as being dependent upon a indefinite base claim.
9. As to claim 31, the limitation "adapted" is held to be indefinite since it suggests optional language. See MPEP 2111.04.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Art Unit: 2626

10. Claim 35 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation in claim 35 recites the limitation of ""executing from a digital storage media in a computing appliance," which was not disclosed in the original application as filed on 05/10/2005.

11. Claims 36-46 are rejected as being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 23, 25, 26, 34, 35, 37, 38, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mast *et al.* ("Speech Understanding and Dialog System with a Homogeneous Linguistic Knowledge Base").

As to claims 23 and 35, Mast teaches a language-processing system comprising:

an input for language in text or audio, as a message (see page 180, left column, sect. II. 1st paragraph, user utterance is understood.);

an extractor (see page 184, left column, 1st paragraph, semantic network) operating to separate words and phrases from the input, to consults a knowledge

base (see page 180, left column, II, 2nd and third paragraphs, morpho-syntactic knowledge, syntactic semantic knowledge, page 180, right column, 1st two paragraphs, pragmatic knowledge and dialogue knowledge), and to assign a concept to individual ones of the words or phrases (see page 184, left column, III, A, 1st paragraph, knowledge base and procedural knowledge used. see Figure 5, describing the connections of inquiries , and Figure 6), describing network of links and see page 188, left column, B, 2nd and 3rd paragraphs where analysis of user input is performed.); and

a connector operating to link the concepts to form a statement (see page 183, left column 4, 2), 1st and second paragraphs and dialogue , system determines the user request based on semantics and a dialogue model) .

However, Mast does not specifically teach the use of a input.

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have modified the language processing as taught by Mast *et al.* with the use of an input device for the purpose of communicating with the system for establishing a dialog (see Mast, page 179, left column, 1st paragraph).

As to claims 25 and 37, Mast teaches all of the limitations as in claim 23, above.

Furthermore, Mast teaches wherein ambiguous input messages are made clear by the nature of the linked-concept statement (see page 183, left column, 2nd paragraph, and dialogue below, where information given by the user needs

clarification (ambiguous, otherwise) clarification dialogue of statements to the user is provided)

As to claims 26 and 38, Mast teaches all of the limitations as in claim 23, above.

Furthermore, Mast teaches further comprising a situation model updated as language is processed (see page 184, left column, 1st full paragraph, Dialog History).

As to claim 34 and 46, Mast teaches all of the limitations as in claim 23, above.

Furthermore, Mast teaches further comprising an artificial language intelligence (ALI) module (see page 180, right column, 1), Morphosyntactic knowledge, page 181, left column, 2), semantic-syntactic knowledge, right column, 3), Semantic-syntactic knowledge-complex constituents and sentences) having cognitive routines of various classes (see page 180, 181, description of syntactic and semantic of user utterance), including routines for extraction of meaning (see page 181, semantic knowledge), context-bound modification (see page 181, left column, 1st paragraph, selectional restrictions cause modification so a not to produce inconsistent semantics), context-bound association (page 184, right column, 1st paragraph and 4th paragraph, objects linked to parts based on relationships), and logical inferences (see page 181, left column, 1st paragraph, selectional restrictions cause modification so a not to produce inconsistent semantics), the ALI module making the routines available to the

extractor (see page 184, left column, 1st paragraph, semantic network uses syntactics, semantics, pragmatics and dialogues), the connector (see page 183, left column 4, 2, 1st and 2nd paragraphs and dialogue, system determines the user request based on semantics and a dialogue model), and other modules of the system.

14. Claims 24, 28, 30, 36, 40, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mast *et al.* as applied to claims 23 and 35 above, and further in view of Gorin (US 7,003,459).

As to claims 24 and 36, Mast teaches all of the limitations as in claims 23 and 35, above.

However, Mast does not specifically teach logically false and meaningless input messages are identified by the nature of the linked-concept statement.

Gorin does teach wherein logically false and meaningless input messages are identified by the nature of the linked-concept statement (see Figure 5, step 5300, decides if tasks can be classified and step 5500 where a probability is evaluated for determining if user input was correctly interpreted where interpretation arises from the Natural Language Understanding Unit 430 in Figure 4).

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have modified the language processing as taught by Mast *et al.* with the use of determining false and meaningless statements as

taught by Gorin for the purpose of correcting language understanding errors or allow users to fix them to improve dialog system performance (see Gorin col. 1, lines 29-30)

As to claims 28 and 40, Mast teaches all of the limitations as in claims 26 and 38, above.

However, Mast does not specifically teach conflicts between the linked-concept statement and the situation model are detected and reported to the user.

Gorin does teach conflicts between the linked-concept statement and the situation model are detected and reported to the user (see col. 2, lines 58-65, system determines an error corresponding to a conflict between a possible natural language understanding and asks the user again for the data.).

As to claims 30 and 42, Mast teaches all of the limitations as in claims 23 and 35, above.

However, Mast does not specifically teach reporting the unlinkable concepts to an external entity (see Figure 5, step 5800, routed to human for assistance, and see col. 4, lines 57-60).

Gorin does teach (see Figure 1, NLU monitor and Figure 5 step 5500, understanding not above a threshold and from the concepts returned by the extractor (see Figure 1, NLU monitor and Figure 5, step 5300, user input is not correctly understood), and reports the unlinkable concepts to an external entity

(see Figure 5, step 5800, routed to human for assistance, and see col. 4, lines 57-60).

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have modified the language processing as taught by Mast *et al.* with the outputting to a third party as taught by Gorin for the purpose of correcting language understanding errors or allow users to fix them to improve dialog system performance (see Gorin col. 1, lines 29-30).

15. Claims 27, 31, 33, 39, 43, 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mast *et al.* as applied to claims 23 and 35 above, and further in view of Shimomura *et al.* (US 2001/0021909).

As to claims 27 and 39, Mast teach all of the limitations as in claim 26 and 38, above.

Furthermore, Mast teaches further comprising a situation model updated as language is processed (see page 184, left column, 1st full paragraph, Dialog History).

However, Mast does not specifically teach a measuring device.

Shimomura does teach the use of a measuring device (see [0077], microphone).

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have modified the language processing as taught by

Mast *et al.* with a microphone as taught by Shimomura for the purpose of carrying out conversation with a user (see Shimomura, [0002]).

As to claims 31 and 43, Mast teach all of the limitations as in claim 23 and 35, above.

Furthermore, Mast teaches the use of the system in dialog systems (see page 179, left column, 1st paragraph).

However, Mast does not specifically teach the system adapted for control of technical systems, including robotic systems, further comprising a virtual realizer recognizing meaning of the concept-linked statements used by the system for generating commands for the technical systems.

Shimomura *et al.* does teach control of technical systems, including robotic systems (see [0017], further comprising a virtual realizer recognizing meaning of the concept-linked statements used by the system for generating commands (see [0090], speech synthesizer outputs speech based on conversation) for the technical systems (see Figure 20, all steps and [0010], [0011], and [0082] it is realized by the topic manager whether the topic of the conversation has changed in order to best communicate with the user).

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have modified the language processing as taught by Mast *et al.* using it in conjunction with robots as taught by Shimomura for the purpose of carrying out conversation with a user (see Shimomura, [0002]).

As to claims 33 and 45, Mast teach all of the limitations as in claim 38, above.

Furthermore, Mast teaches wherein concepts (see page 184, left column, III, A, 1st paragraph, knowledge base and procedural knowledge used. see Figure 5, describing the connections of inquiries , and Figure 6) are applied to user utterance values (see page 180, left column, sect. II. 1st paragraph, user utterance is understood.), and these concepts are applied to the situation model .

Furthermore, Shimomura does teach the use of a measuring device (see [0077]), microphone).

16. Claims 29 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mast *et al.* in view of Shimomura *et al.* (US 2001/0021909).as applied to claims 27 and 38 above, and further in view of Howard *et al.* (US 2001/0041980).

As to claims 29 and 41, Furthermore, Mast teaches wherein conflicts are used to predict future or developing risk (see page 183, left column, 2nd paragraph, and dialogue below, where information given by the user needs clarification (ambiguous, otherwise) clarification dialogue of statements to the user is provided. The clarification helps in predicting the next dialogue.)

Mast in view of Shimomura *et al.* teaches all of the limitations as in claim 27, above.

However, Mast in view of Shimomura *et al.* do not specifically teach the system being used in control situations.

Howard *et al.* teaches the using a language dialog got controlling devices (see [0010]).

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have modified the language processing as taught by Mast *et al.* using it in conjunction with controlling devices as taught by Howard for the purpose of presenting information to the user based on user input for information retrieval (see Howard [0010], [0011]).

17. Claims 32 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mast *et al.* in view of Gorin (US 7,003,459).as applied to claims 28 and 38 above, and further in view of Stieler (US 6,044,322).

As to claim 32 and 44, Mast in view of Gorin teach all of the limitations as in claims 28 and 38, above.

Furthermore, Mast teaches the use of the system in dialog systems (see page 179, left column, 1st paragraph).

Furthermore, Gorin teaches the use of the system in dialog systems (see col. 3, lines 5-10).

However, Mast in view of Gorin do not specifically teach the use of the system in a taxiway control for airports.

Stieler teaches the use of speech in taxiway control for airports (see col. 2, lines 15-27, traffic objects can be identified and output).

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have modified the language processing as taught by Mast *et al.* in view of Gorin using it in conjunction with taxiways as taught by Stieler for the purpose of traffic monitoring (see Stieler col. 1, lines 5-7).

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Budzinski *et al.* (US 5,715,468) is cited to disclose storage and retrieval of knowledge based on textual input. Bayya *et al.* (US 5,774,860) is cited to disclose an

adaptive knowledge base for voice dialogue. Bares *et al.* (US 7,305,345) is cited to disclose receiving user input from a customer and processing it via an intelligent agent. Bridges (US 7,337,157) is cited to disclose a knowledge base for processing user input. Polyani (US 7,363,213) is cited to disclose function of a lexical item in a natural language document. Vanderwende *et al.* (US 7,383,169) teaches the compilation of a lexical knowledge base.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PARAS SHAH whose telephone number is (571)270-1650. The examiner can normally be reached on MON.-THURS. 7:00a.m.-4:00p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571)272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2626

/Paras Shah/
Examiner, Art Unit 2626

06/17/2008

/Patrick N. Edouard/
Supervisory Patent Examiner, Art Unit 2626